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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/813,542	03/30/2004	Guohua Li	09792909-5859	5327

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EXAMINER	
DOVE, TRACY MAE	

ART UNIT	PAPER NUMBER
1795	

MAIL DATE	DELIVERY MODE
11/07/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/813,542	LI, GUOHUA	
	Examiner	Art Unit	
	Tracy Dove	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 October 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-5,7 and 8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-5,7 and 8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This Office Action is in response to the communication filed on 10/17/07. Applicant's arguments have been considered, but are not persuasive. Claims 1, 3-5, 7 and 8 are pending.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/17/07 has been entered.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 4 and 5 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a complex oxide represented by a chemical formula $Li_aMn_b Cr_cAl_{1-b-c}O_d$ (M is aluminum), does not reasonably provide enablement for a chemical formula $Li_aMn_b Cr_cM_{1-b-c}O_d$ (M comprises titanium or magnesium). The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make or use the invention commensurate in scope with these claims. Furthermore, the value a=1.6 is not supported by the specification. The specification discloses a<1.6 (page 7).

Claims 3, 7 and 8 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described

in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The claims recites the limitation "e is equal to 0.4", which does not appear to be supported by the specification as filed. The bottom of page 8 of the present specification discloses "1<1+e<1.4". If e is equal to 0.4, as recited in the presently claimed invention, the equation would be 1<1+0.4<1.4 (1.4 is not less than 1.4). Furthermore, the specification discloses e is preferably within a range of $0.1<e\leq 0.35$ (top of page 9).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 3-5, 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukai et al., JP 2001-122628.

Fukai teaches a lithium ion secondary battery comprising a lithium-manganese multi-component oxide particulate positive electrode active material composition. The composition has the formula $Li_xMn_{1-y-z}M_yN_zO_a$ wherein M denotes Cr and/or Al and N may be Mg or Ti. In the formula, $0.8 \leq x \leq 1.2$, $0 < y \leq 0.2$, $0 \leq z \leq 0.2$ and $1.8 \leq a \leq 2.3$ (abstract). Fukai teaches M may be a mixture of Cr and Al when z=0 (0079,0081). The oxide is obtained by mixing materials with water as a dispersion medium (0060).

Regarding claims 1, 4 and 5, Fukai does not explicitly state the claimed values for "a". However, the courts have ruled where the general conditions of a claim are disclosed in the prior

art, it is not inventive to discover the optimum or workable ranges by routine experimentation. In re Swain et al., 33 CCPA 1250, 156 F.2d 239, 70 USPQ 412. The courts have held that a limitation merely with respect to proportions in a composition of matter or process will not support patentability unless such limitation is "critical". Minerals Separation, Ltd. v. Hyde, 242 U.S. 261 (1916). The specification does not teach or suggest the presently claimed values for "a" are critical. The specification teaches *"compositions of the complex oxides* $Li_aMn_bCr_cAl_{1-b-c}O_d$ *and* $Li_{1+e}(Mn_fCr_gM_{1-f-g})_{1-e}O_h$ *are described referring to specific examples; however, a complex oxide with any other composition can obtain the same effects, as long as the composition is within a range described in the above embodiment"* (page 25). Therefore, the specification teaches against any critically for the value of "a" as long as "1.0<a<1.6". Since Fukai teaches the subscript for lithium is $0.8 \leq x \leq 1.2$, the composition taught by Fukai overlaps with the composition disclosed by the present invention. The present specification discloses the composition of Fukai would have had the same effects as that of the present invention (no critically to the range of "a" as long as "1.0<a<1.6").

Regarding claims 3, 7 and 8, Fukai does not teach the claimed range for e (lithium), f (manganese) or g (chromium). However, the invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made because claims that differ from the prior art only by slightly different (non-overlapping) ranges are prima facie obvious without a showing that the claimed range achieves unexpected results relative to the prior art. See In re Woodruff, 16 USPQ2d 1935, 1937 (Fed. Cir. 1990). See also In re Huang, 40 USPQ2d 1685 (Fed. Cir. 1996) Claimed ranges of a result effective variable, which do not overlap the prior art ranges, are unpatentable unless they produce a new and unexpected result which is

different in kind and not merely in degree from the results of the prior art. Fukai teaches y and z can be at most 0.2, thus, manganese cannot be less than 0.6, which is slightly outside the claimed range of 0.2-0.5 for manganese. Furthermore, Applicant has not shown any critically or unexpected results regarding the limitation "e is equal to 0.4".

Further regarding claims 4 and 8, obtaining the oxide by mixing the materials with an ethanol dispersion medium would have been obvious to one having ordinary skill in the art at the time the invention was made because Fukai teaches the oxide may be obtained by mixing the materials with water as a dispersion medium (0060). Applicant has represented water and ethanol dispersion mediums as equivalents in the claims and throughout the specification.

Response to Arguments

Applicant's arguments filed 9/14/07 have been fully considered but they are not persuasive. The 35 U.S.C. 112, 2nd, rejection has been withdrawn. The 35 U.S.C. 102(b)/103(c) rejection has been withdrawn.

Applicant argues Fukai does not teach or suggest e is equal to 0.4, as required by claims 3, 7 and 8. Note this limitation has been rejected as new matter under 35 U.S.C. 112, 1st. However, Fukai teaches a composition having the formula $Li_xMn_{1-y-z}M_yN_zO_a$ wherein M denotes Cr and/or Al and N may be Mg or Ti. In the formula, $0.8 \leq x \leq 1.2$, $0 < y \leq 0.2$, $0 \leq z \leq 0.2$ and $1.8 \leq a \leq 2.3$. Applicant has not shown any critically to the value of 0.4 for e ($Li_{1.4}$) versus the value of 0.2 discloses by Fukai ($Li_{1.2}$). See reasons for rejection above. Evidence of unexpected results must distinguish the *claimed invention* over the *prior art of record.*

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tracy Dove whose telephone number is 571-272-1285. The examiner can normally be reached on Monday-Thursday (9:00-7:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

November 5, 2007

TRACY DOVE
PRIMARY EXAMINER